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ABSTRACT

This brief overview of some aspects of human development aims to enable paraprofessionals (teachers' aides) to work with teachers and children with greater understanding and effectiveness. Aspects discussed include heredity, IQ scores and learning ability assessment, principles of development, and principles of learning. (ED)

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Human Growth and Development

(Workshop for Paraprofessionals)

Chesterfield County, Sept. 17, 1970

The most fascinating and at the same time the most challenging story in the world is that of the growth and development of a human being. Despite the mysteries and gaps of ignorance, we know enough about children and their development to do a much better job in rearing and educating them than we are now doing. If we were bold enough and motivated highly enough to act on the knowledge presently available to us, a radical change in educational outcomes and ultimately in the betterment of society in general could be achieved.

Education begins with the child, himself. Understanding of the learner is more important than understanding of material to be taught, as important as the material might be. This is true because the child, in the final analysis, must do his own learning. It is the business of the teacher to arrange and promote the proper conditions for learning, to remove the obstacles to learning, to create a need for learning, and to show the way. It is the job of the paraprofessional to assist her in these responsibilities. However, neither the teacher nor her helpers can promote learning and growth without some understanding of the learner (the child, himself), the way he functions as an organism, as a member of a group, as his age increases; in short, as he develops. It is, therefore, important that we consider in a general way, some aspects of human development that can help us to work with children with greater understanding and effectiveness.

Since children, even those entering school for the first time, come to us already advanced along the developmental trail, we must try to understand some

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of the factors that have contributed to their development before they came to school and we must rid ourselves of some common fallacies in our beliefs about children. I suggest that we spend a little time talking about heredity, trying to understand a few simple, biological relationships between parents and children and trying to see if many of the actions of children that we have attributed to hereditary determinants really do stem from the child's heredity. Then we should talk about the child's intelligence - his I.Q. scores, his ability to learn - to see if we have any real grounds for considering him "dumb" or unteachable. When we have explored these topics, we can discuss in a positive fashion the principles of human growth and development and the principles of learning. Armed with this understanding, paraprofessionals bring a new dimension to the classroom, reinforcing and supporting the school's efforts to see that each child reaches his full potential for development.

Now let us start with heredity. What are our present thoughts about its role in development? How true are the statements, "Like father, like son;" or "Like mother, like daughter?" Is the child, indeed, "a chip off the old block?" If so, having known "the old block," we know the child. I doubt that we would wish to say to any child, "I know you because I know your father." What, then, can we say about heredity that will help us develop constructive attitudes about children?

1. Children inherit not merely from their immediate parents but from the two lines of parents (maternal and paternal).
2. Through a chance combination of genes from these lines, there results an individual whose combined traits make him unique - unlike any other human being. (We are aware of the identical twins and their common beginning.)

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3. Physical features can more safely be attributed to heredity than behavioral traits.
4. We no longer believe categorically that "nothing can be done about it if it is inherited."
5. We live in an age of miracles: there has been notable success in coping with hereditary deficits.
6. There are limits of strength, endurance, function, and modifiability set by heredity but it is my opinion that the limits are generous and that there is no need for an attitude of helplessness and hopelessness in the face of hereditary factors.
7. We must differentiate between those conditions determined by heredity and those developed within the prenatal environment or even at birth. More frequently than we have recognized a child's difficulties in learning and in social relations are attributable to prenatal and perinatal factors.

Intelligence is one of the traits that we seem unable to make up our minds about. The old controversy about whether or not it is determined by heredity or environment keeps coming to life again even though we think we have dealt it a death blow many times. Although we have said in voices loud and clear that there is, in fact, no fight here, we have not been convincing. Let me briefly review not the arguments on both sides but what I propose as the resolution of the argument and what I suggest as another constructive attitude. First, we admit that an organism cannot exceed its limits. There is an inherent, indisputable logic in this statement. We admit, secondly, that heredity sets the limits by determining the structure and its potential. Herein lies the challenge to the environmental factors including education. We are presented with a child: we are presented with a bundle of potential: we are

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presented with a possibility. If we deal with this potential according to the principles of growth, development and learning, the potentiality becomes increasingly a reality. On the other hand, if we neglect it and leave it in the state that heredity created it, its growth will be handicapped or it will die altogether.

More concretely, we think of intelligence in terms of the I.Q. scores that children make on tests. Did it ever occur to you that children make different scores on different intelligence tests, or with different teachers or examiners, or at different times on the same test? Did you know that one child can have several different I.Q.'s? Did you know that there is no agreement on what intelligence really is? Then where and how do we get these magic scores that become so influential in determining what the schools and society will do with our children? The scores are derived from the children's performance on certain tests. Some questions on the tests are taken from certain school experiences like arithmetic, vocabulary, and social studies; other questions are taken from general life experiences and depend upon where you live, what you have seen, what you have read, people you have contacted, places you have been, conversations you have had, observations you have made, motor skills and talents you have developed. Note that no questions on the test can sample the hereditary endowment directly. Instead, all the questions depend on learning. It has been shown that when the type of information, skill or mental process, even the routine of taking tests have been incorporated in the child's experiences, his test scores have been raised and consequently his so-called intelligence has been increased. The task of the school, then, is to provide the necessary experiences and to develop intelligence - not merely to test for it. For on the basis of these test results, children are categorized and far-reaching decisions are made about the child's educational program - decisions which affect the future course

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of his life. Paraprofessionals have a great responsibility here in focusing observation, assisting with field trips, giving encouragement, following through with prescriptive programs, and helping the school to raise aspirations and broaden horizons. We have two alternatives: (1) to define intelligence meaningfully, improve test construction, and use test results for the development of the child; or (2) to stop testing, and just teach.

What I have said so far should serve as a background for discussing some principles of development and a few principles of learning. We will start with the developmental principles:

1. Development is continuous
2. Development is sequential: It is orderly: some patterns must come before others
3. Development proceeds along several dimensions simultaneously - physical, social, emotional, mental
4. All dimensions are interrelated
5. Different children develop at different rates (all six year-olds are not at the same point of development)
6. Each child has a unique pattern of development (comparisons are often untenable)
7. Control of the big muscles precedes control of the fine muscles (we use big pencils for little children)
8. Development is from the concrete to the abstract (we need demonstrations and practical experiences to aid the development of concepts)
9. Development is determined by many factors (heredity, physical care, nutrition, exercise, mental stimulation, love, encouragement - all of which may be called internal or external factors)

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10. The goal of development is maturity:

From impulsive behavior to controlled behavior

From external control to internal control

From self-centeredness to consideration of others

From dependence to independence

There are many more developmental principles. These should be sufficient to emphasize the fact that principles should indicate and govern our practices in our attempt to foster wholesome development.

Learning is the process lying at the very heart of development. Let us look finally at the nature and conditions of learning. When we say that a child has learned, we mean several things. We may be referring to the fact that he can now do what he could not do before; or he has stopped doing what he was doing before. This is performance or skill. We may mean that he knows now what he did not know before; he understands now what was not clear before; or he is aware now of what he had not noticed before. This is cognition or knowledge. We may mean that he feels now what he did not feel before - he is aroused now or has ceased to be aroused. This is emotion or feeling. We may mean that he is now for what he was against or against what he was once for; he has learned to like or to dislike; he favors or he does not favor a person, event, or condition. This is attitude. Skill, knowledge, feeling, attitude - these four are what we learn. These make up behavior. You will note that in each instance I pointed out a change from one state to another. Furthermore, I implied that this change occurred within the child himself - he did, he understood, he felt or he tended in a particular direction. In short, he experienced change. This is learning.

How do you get it to occur? For the more passive type of learning, it almost "just happens" by living within the physical and social environments.

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We can hardly tell when or how we learned to like or dislike, love or hate or to be prejudiced for or against certain groups. Or, these may be learned actively.

For active, intentional learning, we have found that certain conditions must pertain:

(1) A wish to learn (motivation)

(2) Opportunity to try (learning resources)

(3) Rewards (negative and/or positive reinforcement)

(4) Success

Just as there are principles of development, there are principles of learning:

1. Learning is most efficient at the "teachable moment"
2. Intrinsic motivation is more effective than extrinsic motivation
3. In the long run praise is more effective than punishment
4. Children differ in their learning styles
5. Meaningful material is learned more readily than non-meaningful material
6. Learning that satisfies a need is more likely to occur than non-relevant learning
7. Children learn best in an atmosphere of respect and encouragement
8. The degree of learning is influenced by the expectations of the teacher
9. Learning is facilitated in real life situations
10. Persistent failure kills learning

Again, there are many more principles of learning. The paraprofessional who observes the teacher's planning and practice will be able to understand why she makes several plans instead of one, and why she assigns certain students to the paraprofessional for special kinds of help. Working together, they can provide for the children the best opportunity for maximum growth and development.

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